



**ISSN 2238-118X**

# ***CADERNOS CEPEC***

***V. 7 N.09 Setembro de 2018***

**SIX SIMPLE PROPOSITIONS ON BUDGET DEFICITS, PUBLIC DEBT AND MONEY**

**Malcolm Sawyer**

**Centro de Pesquisas Econômicas da Amazônia**



**CADERNOS CEPEC**

**Publicação do Programa de Pós-graduação em Economia da Universidade Federal do Pará**  
**Periodicidade Mensal – Volume 7 – N° 09 –Setembro de 2018**

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# **SIX SIMPLE PROPOSITIONS ON BUDGET DEFICITS, PUBLIC DEBT AND MONEY**

**Malcolm Sawyer<sup>1</sup>**

## **Abstract**

The paper sets out and elaborates on six propositions on budget deficits, public debt and money which should inform debates on fiscal policy. The propositions are:

1. Money availability is not a limitation on government expenditure as the central bank is able to provide any required finance. The key considerations should focus on the issues of the social desirability of the proposed expenditure and the eventual funding of the expenditure.
2. Phrases such as ‘magic money tree’ are designed to confuse and mislead.
3. Proposals such as people’s QE do not enable any stimulus which cannot be obtained from conventional fiscal policy and is anti-democratic putting expenditure decisions in the hands of unelected central bankers.
4. The ‘golden rule’ of public finance (borrowing only for public investment) suffers from the fallacy of treating government like a firm and is comparable to the ‘government is like a household’ fallacy.
5. The target for budget position should be to secure full employment and capacity. Funds would be forthcoming to underpin such a position.
6. Public debt should be judged sustainable (and not excessive) by reference to the level of debt which results from a budget position as forthcoming from proposition 5. Public debt is to be considered as less of an issue (when government can cover interest through taxation and through money creation) than private debt and foreign debt.

**Key words:** fiscal policy, budget deficits, quantitative easing, money creation

**Journal of Economic Literature codes:** E61, E62, E50

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# **SIX SIMPLE PROPOSITIONS ON BUDGET DEFICITS, PUBLIC DEBT AND MONEY**

**Malcolm Sawyer**

## **1. INTRODUCTION**

This paper sets out six basic propositions on budget deficits, public debt and money which should inform debates on fiscal policy. These propositions are:

1. Money availability is not a limitation on government expenditure as the central bank is able to provide any required finance. The key considerations should focus on the issues of the social desirability of the proposed expenditure and the eventual funding of the expenditure.
2. Phrases such as ‘magic money tree’ are designed to confuse and mislead.
3. Proposals such as people’s QE do not enable any stimulus which cannot be obtained from conventional fiscal policy and is anti-democratic putting expenditure decisions in the hands of unelected central bankers.
4. The golden rule’ of public finance (borrowing only for public investment) suffers from the fallacy of treating government like a firm and is comparable to the ‘government is like a household’ fallacy.
5. The target for budget position should be to secure full employment and capacity. Funds would be forthcoming to underpin such a position.
6. Public debt should be judged sustainable (and not excessive) by reference to the level of debt which results from a budget position as forthcoming from proposition 5. Public debt is to be considered as less of an issue (when government can cover interest through taxation and through money creation) than private debt and foreign debt.

## **2. MONEY CREATION AND BUDGET DEFICITS**

It is often said that money can be produced *ex nihilo*. It is clear that money can be created by the ‘stroke of a pen’, by ‘printing money’ and now more usually by an appropriate electronic entry. Money is whatever financial instruments serve as a generally accepted means of payment within the society concerned. Under present institutional arrangements, money predominantly takes two forms –central bank money and clearing bank money. Both are, of course, denominated in the country’s unit of account, and can usually be exchanged on a one-for-one basis.

The creation of money comes through decisions taken by the banks (central, clearing) and their customers. In the case of the central bank, government spends by drawing on its own bank account with the central bank, and the central bank can provide overdraft facilities to the government if it wishes to. When the government spends it injects central bank money into the economy which is held by the clearing banks (as reserves) and the public (as notes and coins). Further, the banks holding of central bank reserves is matched by bank deposits held by the public which can serve as money. In the case of clearing banks, in the process of providing loans, bank deposits are created which are transferable between people and is treated as money in the sense of being a generally accepted means of payment. Clearing bank money which forms the bulk of what is regarded as money under present institutional arrangements. Here, it is the creation and destruction of central bank money which are closely related with government expenditure and tax revenue receipts which is the centre of attention.

The creation of money involves a set of assets and liabilities being created, which led to subsequent economic decisions. In the case of bank loans leading to the creation of money, for the bank the loan is an asset and the corresponding bank deposit a liability; for the public, the loan is a liability for the person taking out the loan and the bank deposit an asset for its holder. In this case, as a result of loan creation, private expenditure will take place. It is also clear that money can be readily destroyed through the repayment of loans as well as created. Central bank money can then be said to be destroyed in the course of the payment of taxes though a more accurate expression would be that central bank money is removed from private circulation.

Taxes are paid to government in the form of money. In that way, taxes cannot be paid unless money has already been created. There is then a sense in which government expenditure precedes taxation – the government expenditure goes alongside money being injected into the economy, and taxes can only be paid through the use of money. If money has not been introduced into the economy, then it cannot be used to pay taxes to the government. In this context, money refers to central bank money which is accepted by government as payment of taxes. When an individual pays their taxes, the usual process would be to write a cheque or

authorise an electronic transfer to the tax authorities– but the final stage would be for the individual’s bank to transfer central bank money to the government.

When people buy bonds from government, money is received by the government into its account with the central bank. As far as the private sector is concerned, money has been withdrawn from circulation in payment for the bonds. In the case of clearing bank money, the repayment of loans by the public destroys bank deposits. This notion that money is both created and destroyed underpins the view that the amount of money in existence is heavily dependent on the willingness of people to hold money (generally, and in my view misleadingly, referred to as the demand for money).

Consider the immediate consequences of government expenditure which is financed by the government drawing down on its account with the central bank. In Table 1, there is a simple representation of the changes in assets and liabilities which occur.

**Table 1** Changes in assets and liabilities following government expenditure

	Assets	Liabilities
Central Bank		Reserves
Banks	Reserves	Bank deposits
Private sector	Bank Deposits	

When the (central) government spends, it draws on its account with the central bank, and provided that the central bank allows the government to do so, there is always money available to *finance* government expenditure. The only way that money would not be available would be if the central bank refused to allow the government to draw on its account or to extend overdraft facilities. It is the possession of money which enables spending to take place; without possession of money spending cannot proceed.

It is helpful to draw on the distinction made in the monetary circuit literature between what is termed there ‘initial finance’ and ‘final finance’ but which I prefer to refer to as (initial) finance



and funding<sup>2</sup>. Initial finance is the idea that in order to be able to spend prior possession of money is required. Funding (final finance) relates to funds used (from receipts, from borrowing, and from use of own assets) to cover expenditure. The (initial) financing of government expenditure can only come from the government's account with the central bank. In contrast, the funding of government expenditure comes, as discussed below, from a combination of tax revenues and borrowing.

Money in economics textbooks is often viewed in terms of its functions including means of payment, store of wealth and unit of account. The first listed clearly refers to money being required in order to make payments to enable expenditure to take place, and that money is held by individuals in order to dispose of it. The second of store of wealth refers to individuals holding money for extended period of time as part of their wealth, and corresponding when, through savings, financial assets are acquired, money is one of those financial assets.

An obvious, though it seems often forgotten, feature of money is that once it has been created it has to be held by someone. The question arises as to whether the amount of money which has been created (whether by the central bank or through clearing banks) is in some sense held willingly by individuals and firms. In answering that question, the two functions of money mentioned above have to be recognized. Money as a means of payment is only held temporarily between the time of its receipt and the time of expenditure of the money. Money as a store of value is held on a longer term basis. The average amount of money which an individual wishes to hold in respect of means of payment is often summarised as the transactions demand for money.

The question so often raised to any proposal for increased public expenditure of 'where's the money coming from?' is readily answered – the government draws down on its account with the central bank. It comes from the same place that money for public expenditure always comes from. To keep asking this question draws attention away from the crucial issues. The immediate purpose of public expenditure is to seek to be deploy resources to achieve certain ends and

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<sup>2</sup> The terminology comes from the circuitist literature: see Graziani (2003). For discussion of government and central bank money in a circuitist context see Sawyer (2014).

provide economic and social benefits. The first question should be: are the relevant resources available?, will those resources to be drawn away from other economic activities and to what degree will previously underemployed resources (particularly labour) become employed, and how socially useful will the deployment of resources as compared with those other activities. These are, of course, difficult questions to answer upon but they are the crucial ones.

The second important question relates to the *funding* of public expenditure. This is expressed in simply terms in the following manner. Consider accounts relating to a specific period of time (say a year). Then for the government (excluding central bank):

$G = T + DB$  – that is government expenditure  $G$  is funded by tax revenues  $T$  and the net sale of government bonds  $DB$ . The government expenditure will have been initially financed by the use of central bank money, and the equation here refers to the final funding of government expenditure. The tax receipts and the sale of bonds by government will withdraw money from circulation.

Some of the government bonds will have been acquired by the central bank through forms of open market operations. The extent of this can be written as:

$DCBM = DBb$  where  $DCBM$  is the net increase in central bank money (held as reserves by banks) and  $DBb$  is the bonds purchased by the central bank. This net increase in central bank money comes about as a result of a gross increase from the financing of government expenditure and the decrease from tax receipts.

The consolidated accounts of central government and central bank would then read:

$G = T + DBh + DBb = T + DBh + DCBM$  where  $DBh$  is the net increase in bonds held by the public.

Hence at this consolidated level government expenditure is funded by a combination of tax receipts, bonds and increase in central bank money held by banks.

There is a straightforward relationship between private savings and investment and the budget deficit (here for simplicity, the case of a closed economy is taken):

$S - I = G - T$ , where  $S$  is private savings and  $I$  private investment (over the relevant time period).

In turn, this provides:

$S - I = DBh + DCBM = DBh + DBD$  where  $DBD$  is the increase in bank deposits which correspond to the increase in bank reserves with the central bank, which are equal to  $DCBM$ .

Thus, there is the funding of budget deficit by a mixture of sale of bonds to the public and the issue of central bank money. The mix is influenced by monetary policy and open market operations and by the willingness of the public to hold bonds and to hold bank deposits. It is also the case that private savings are held in the form of the funding of investment (generally indirectly), bonds and bank deposits.

### **3. ON THE ‘MAGIC MONEY TREE’**

Phrases such ‘there is no magic money tree’ are used to denigrate serious proposals for public expenditure and conjures up false images of the ways in which expenditure is financed and funded, as discussed in the previous question.

An illustration of this is the response given by UK Prime Minister Theresa May in a response to a question from a nurse on why her wages had not risen in many years on an election special of BBC *Question Time* in June 2017. May responded "And I'm being honest with you in terms of saying that we will put more money into the NHS, but there isn't a magic money tree that we can shake that suddenly provides for everything that people want."<sup>3</sup> It could of course be asked where the ‘more money’ for the NHS would come from in the absence of a ‘magic money tree’; and it is often observed that a few weeks after those remarks promises of around a billion pounds of additional expenditure in Northern Ireland were made to secure the Parliamentary support of the DUP (Democratic Unionist Party).

The phrase ‘magic money tree’ is a highly misleading one for the images which it conjures up. First, there is nothing magic about the creation of money – just double entry booking! A bank

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<sup>3</sup> <http://www.independent.co.uk/news/uk/politics/theresa-may-nurse-magic-money-tree-bbcqt-question-time-pay-rise-eight-years-election-latest-a7770576.html>

provides a loan (which is an asset for the bank and a liability for the economic agent taking out the loan) and creates a bank deposit (which is a liability for the bank and an asset for the holder of the deposit). The bank deposit is to be regarded as money as it is readily transferable between individuals and is generally accepted as payment and hence serves as a means of payment – the crucial feature of money. For government, the central bank enables government spending to occur which creates money as indicated above.

Second, the metaphor of ‘tree’ suggests taking from the tree (in May’s quote by shaking) – instead of picking apples, it is money which is picked. This completely ignores that money has to be created and is not grown. It ignores that money is not net wealth (whereas as an apple plucked from a tree is) but is an asset and a liability of equal magnitude. It also ignores that money is not only created but also destroyed.

The cry also goes up ‘there is no money left’. An example of this is a letter left for his successor as Chief Secretary at the Treasury, Liam Byrne wrote ‘I’m afraid there is no money’<sup>4</sup>. This claim is incorrect at three levels. First, as explained above, there is not a fixed pot of money, and money is being continuously created (and also destroyed) by central bank and by banks. A government can spend as long as the central bank facilitates that expenditure.

Second, if the statement is taken to mean that tax revenue has to cover government expenditure and there has to be no budget deficit, then that was clearly mistaken as the UK government has continued to run budget deficits since 2010 (as well as generally before 2010).

Third, whether a budget deficit is to be deemed too high or too low should be judged by reference to the idea that the objective of fiscal and budgetary policy should be the achievement of a high level of employment and capacity utilisation. The budget deficit is too low when there is significant amount of unemployment and excess capacity, and it is a marker for aggregate

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<sup>4</sup> This was written in May 2010 as the Conservative-Liberal Democrat coalition replaced the Labour government and the budget deficit was running at around 9 per cent of GDP. This letter was subsequently waved by David Cameron in the 2015 election campaign to illustrate the difficulties which the coalition government had inherited. Liam Byrne later penned an article in the Guardian headed ‘the letter I will regret for ever’. But as he wrote there ‘I thought I’d write one letter more to my successor. Into my head came the phrase I’d used to negotiate all those massive savings with my colleagues.’ <https://www.theguardian.com/commentisfree/2015/may/09/liam-byrne-apology-letter-there-is-no-money-labour-general-election>.

demand being too low and needing to be boosted by fiscal policy. The budget deficit is too high when there is substantial overheating of the economy.

#### 4. 'PEOPLE'S QUANTITATIVE EASING'

A number of proposals have been advanced following the experiences of policies of 'quantitative easing' going under headings such as 'people's quantitative easing', 'green quantitative easing' and a recent 'quantitative easing for people' (for example, [www.positivemoney.org/what-we-do/qe-for-people/](http://www.positivemoney.org/what-we-do/qe-for-people/)). The proposals involve the central bank creating money to finance expenditure, and a variety of expenditures are proposed by different bodies though often include enhanced income transfers (basic or citizen's income being a favourite), and investment (often with a focus on 'green investment'). The expenditure proposals are generally designed to appeal to progressive minded people – I haven't yet heard of 'quantitative easing to buy Trident' or build nuclear power stations!.

The key feature of 'quantitative easing' is that the central bank purchases financial assets from the private sector to reach a target level of purchases and then holding of financial assets. Quantitative easing (QE) is at heart a balance sheet rearrangement from which some changes to asset prices, interest rates and spending may follow. The central bank buys bonds from banks and the public. The central bank's balance sheet changes are illustrated in Table 2.

**Table 2**

Assets	Liabilities
<b>Central bank</b>	
Bonds purchased	Central bank money issued
<b>Banks</b>	
Central bank money held	Bank deposits
<b>Public</b>	
Bank deposits	Bonds sold

The central bank now owns more interest-bearing assets than before. The banks hold reserves with the central bank, and as their reserve ratio is now much higher (and in effect not able to

reverse the change), the hope is that they would be encouraged to extend loans, though in order to do so there would need to be an increase in demand for loans from credit-worthy customers. The public may feel in a more liquid position with the rise in bank deposits at the expense of decline in bonds held. The hope of QE was indeed that there would be favourable effects of spending decisions. What is in effect an increased demand (from the central bank) for bonds may serve to raise the price of bonds, and as such to aid the balance sheets of holders of bonds. The effects of QE are distributional in that prices of financial assets are thereby influenced. The policy is undertaken in the belief that the banks would be encouraged to provide loans in light of the additional reserves which they hold, and the private sector to spend more through being more liquid and holding more money (bank deposits).

The central bank has enabled money to enter into the private economy. Could that money creation be used to finance some element of public expenditure? Recall that if public expenditure is to occur then it has to be financed, and this is done through the issue of central bank money. In the nature of money creation as a book keeping entry, from the money finance perspective the two are by no means mutually exclusive. Using central bank money to finance public expenditure is to be treated as fiscal policy. However, people's quantitative easing appears to place decisions on the scale, composition and timing of public expenditure into the hands of the central bank. The timing of parts of public expenditure becomes tied to the timing of quantitative easing – if there is deemed to be a monetary policy need for further quantitative easing, then additional public expenditure can be sanctioned. Decisions on the appropriate composition of public expenditure have to be made, and it remains unclear in whose hands those decisions would lie. However, people's quantitative easing may place decisions on the scale and composition of public expenditure into the hands of the central bank.

There is a conflation here between “quantitative easing,” which involves the exchange of one set of financial assets for money, and “public money creation,” which involves the creation of money to finance expenditure. The former can have effects on asset prices, on the reserve position of the banks, etc., which may have some indirect effects on expenditure decisions. The latter involves direct expenditure, which is resource-using and income-generating. Further, money is being continuously created and destroyed—in the case of central bank money,

destroyed when taxes are paid and when new bonds are sold. Whether “public money creation” would enlarge the stock of central bank money would depend on the extent to which that money creation was followed by money destruction.

Decisions over the scale, composition and timing of public expenditure should rest firmly in the hands of the government answerable to Parliament and debate. It can always be (initially) financed by government drawing on its account with the Central Bank. There are then further decisions to be made on how the public expenditure is funded—what mix of tax revenues, bonds and money is appropriate.

## **5. ‘GOLDEN RULE OF PUBLIC FINANCE’**

The basis of the so-called ‘golden rule’ of public finances is that (at least averaged over the business cycle) the budget position with regard to current expenditure and tax revenue should be in balance, and that government borrowing can be undertaken for public investment. A similar rule can be set where it is the structural current budget which is to be in balance.

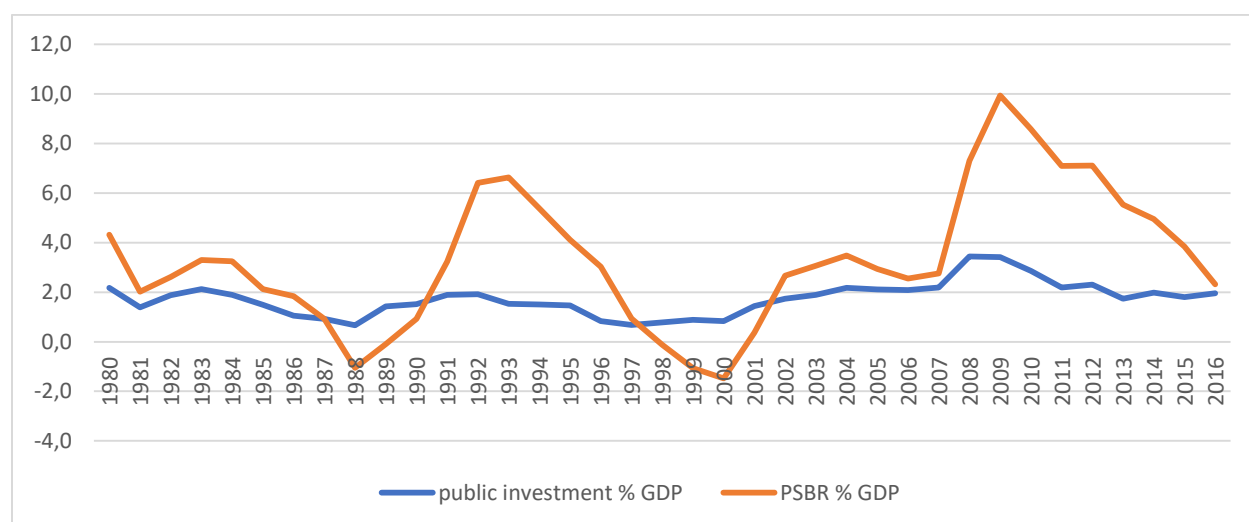
There are four general comments to be made regarding the ‘golden rule’. First, in this context public investment refers to net fixed capital formation. It does not follow the general notion of investment as the use of resources in the present in the hope of securing future benefits. Thus, purchase of military hardware is included in the definition of investment, whereas expenditure on education is not. The investment covered by the golden rule is physical infrastructure investment but not social infrastructure investment.

Second, the argument for ‘borrowing to invest’ comes across as treating government like a firm (analogous to the way in which the government is often treated akin to a household) on the basis that investment is undertaken to yield future returns. Yet public investment is (or should be) undertaken on a social benefit/social cost basis, and not on the basis of ‘private’ costs and returns to the government. In general, public investment does not yield direct financial returns to the government (though social housing and toll roads would), though it yields indirect financial returns through tax revenues generated by the construction of the public investment and any

further private investment and growth stimulated by the public investment. These indirect financial returns can, of course, be difficult to predict and to measure.

Third, the ‘golden rule’ tells us nothing on the appropriate scale of public investment or the appropriate scale of government borrowing (which is discussed further in the next section). But note here (Figure 1) that as far as the UK is concerned that public net investment has generally been less than public borrowing, but also (as approximately the case in 1999/2000 and 2007/08) the extent of public borrowing (budget deficit) was broadly as is advocated in the next section, namely a budget deficit set to be consistent with full employment.

**Figure 1 Public investment and public sector borrowing requirement**



In this context, the way in which Keynes advocated what appears to be a ‘golden rule’. Keynes appeared to consider capital expenditure as yielding profits: “the very reason that capital expenditure is capable of paying for itself makes it much better budgetwise and does not involve the progressive increase of budgetary difficulties, which deficit budgeting for the sake of consumption may bring about or, at any rate, would be accused of bringing about” (Keynes, 1980, p.321).



Keynes also advocated that “in peace-time budgets through the Chancellor making a forecast of capital expenditure under all heads, and comparing this with prospective savings, so as to show that the general prospective set-up is reasonably in accordance with the requirement of equilibrium. The capital budget will be a necessary ingredient in this exposition of the prospects of investment under all heads. If, as may be the case, something like two-thirds or three-quarters of total investment will be under public or semi-public auspices, the amount of capital expenditure contemplated by the authorities will be the essential balancing factor. This is a very major change in the presentation of our affairs and one which I greatly hope we shall adopt. It has nothing whatever to do with deficit financing” (p.352). The sheer scale of public investment could be noted: but of more significance to our argument here is the notion that public investment is used as a balancing item, bringing overall savings and investment into line (presumably at full employment or at least a high level of employment).

Fourth, the ‘golden rule’ has political rhetorical appeal coming from the (implied) comparison of government with private firm as mentioned above, in a similar manner to the appeal which ‘government must balance its books’ has by comparison with households and ‘not spending beyond your means’. Using a term like investment suggests prudent use of resources, though obviously ‘white elephant’ projects are by no means excluded!

From a fiscal policy perspective, capital expenditure is like current expenditure in being resource using and requiring to be financed. There is no rationale for separating current expenditure from capital expenditure (in the ways in which the two are defined in the national accounting framework) when considering fiscal policy and appropriate level of budget deficit (or surplus).

## **6. WHAT SHOULD THE BUDGET POSITION BE AND HOW SHOULD IT BE FUNDED?**

The basis of the approach here is that the budget position (whether deficit or surplus) should be targeted to achieve a high level of employment which is as close to full employment as possible

given the productive capacities of the economy and their locational distribution<sup>5</sup>. This approach picks up on the position of Lerner (1943), Kalecki (1944b) that fiscal policy should be seeking to balance the economy at full employment rather than balance the budget.

The achievement of a high level of employment essentially depends on the level of aggregate demand, and hence the target budget position depends on the forecast level of private demand. It has to be acknowledged that the actual budget position depends not only on the tax structure and rates and public expenditure plans but also on the state of economic activity which itself is influenced by the tax and expenditure decisions.

The idea that the budget position should be set to be consistent with high level of employment means that the tax rates and public expenditure plans conform to the equation (1) for budget deficit.

$$(1) \quad G - T(Y^*) = S(Y^*) - I(Y^*) - CA(Y^*)$$

where  $Y^*$  is the level of output/income consistent with a high level of employment and CA is current account position. The appropriate scale of the budget deficit or surplus then depends on savings, investment and the current account position functions, and as those functions shift around so would the appropriate budget position. It clearly follows that if the right-hand side of the equation equals zero, then the appropriate budget position would be in balance, and if the right-hand side is negative, then a budget surplus would be appropriate.

A belief that, whether through interest rate variations or otherwise, there is a strong tendency for intended savings and intended investment to come into balance, combined with exchange rate adjustment which lead to a current account balance would lead to a balanced budget being appropriate. Outside of such a belief, the appropriate budget position could be a deficit or a surplus. Kalecki (1944a, 1944b) amongst many others saw a need for a long term budget deficit on the basis of a tendency for intended savings to run ahead of intended investment. That should not be regarded as a universal truth – at the present time Germany has a small budget surplus and

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<sup>5</sup> This is to recognise that the achievement of full employment requires not only an appropriate level of demand but also sufficient capital equipment in the relevant locations, and that industrial and regional policies are needed to complement fiscal policy.

high level of employment (unemployment rate of below 4 per cent) though aided by a large current account surplus which offsets high level of savings relative to investment.

The fine tuning of the macroeconomy under which government expenditure and tax rates would be varied on a frequent basis to seek secure continuous high levels of employment faces difficulties of information (data on position of economy inevitably lags behind), difficulties of implementation etc.. It may though be possible to design the tax system so that it is progressive (and hence rising incomes raises tax revenues disproportionately) which would aid to some degree fine tuning. But budget decisions are taken on an annual basis, and for whatever reasons tax rates and expenditure plans are adjusted annually.

What are the financial constraints on the level of public expenditure? It has been argued above that the availability of money to pay for public expenditure is not a constraint in so far as the central bank is willing to permit the government to spend. There can be constraints on the expenditure actually occurring through unavailability of the relevant resources. From a funding perspective,  $G = T + \text{net borrowing}$ , and the net borrowing comes from the private and foreign sectors and is equal to  $S - I + FA (= - CA)$ . The funding constraint on government expenditure then appears to be tax revenue and borrowing. But the level of government expenditure is a significant determinant of tax revenue, savings, investment and the financial account position. The funding constraint is then the sum of net private savings and financial account position generated at high level of employment. This can be written in terms of the funding limits on the budget position that  $BD \leq S^* - I^* + FA^*$  where \* after variable signifies its level if high level of employment were achieved.

The question can also be asked as to the appropriate manner in which the budget deficit be funded as between issue of bonds and of (central bank) money. Recall from above that  $BD = DB + DCB = S - I + FA$ . In other words, the net private savings and borrowing from overseas have to be held as a combination of bonds and central bank money. As explained above, the central bank money is held as bank reserves to which there is a counterpart in the form of bank deposits held by the public. The limitation on the use of money funding of budget deficit then comes from limits on the willingness of people to hold their (additional) savings in the form of bank deposits

(and for the banks to accept holding reserves with the central bank as assets corresponding to their liabilities in the form of bank deposits).

An economic agent may face a liquidity constraint on their expenditure plans – they do not have money immediately available to finance those plans. Government does not face such a liquidity constraint in so far as the central bank can (and usually will) always provide any required liquidity. An economic agent faces a funding constraint in so far as expenditure = income plus borrowing. At the individual level there is a tendency to think in terms of a budget constraint as being that income constrains expenditure, though the constraint can be eased by borrowing. But it is feasible to think in terms of expenditure ‘constraining’ income: someone who wishes to pursue a frugal lifestyle with low expenditure only requires a low income and may adjust their work/life balance accordingly. There is a funding relationship on government which specifies that  $G = T + \text{borrowing}$  (in a highly simplified form). For government, tax revenue depends on tax rates and level of income, which in turn will be influenced by the level of government expenditure. Its ability to borrow depends on the willingness of the private sector to lend to – and that in effect depends on the excess of private savings over private investment.

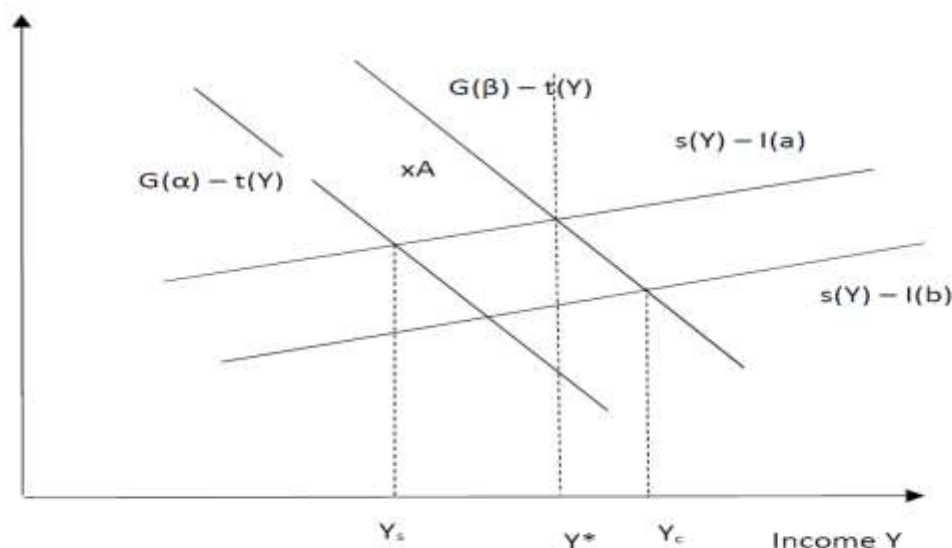
There is then the question of how much should the government be prepared to borrow. The thrust of the argument here is sufficient to secure full employment.

These arguments are simply illustrated in Figure 2. A line, such as  $s(Y) - I(a)$  in Figure 2, for savings minus investment in effect forms an upper boundary for government borrowing in light of what people wish to save and firms wish to invest. Reaching point such as A for the size of budget deficit would require some combination ‘forced savings’ and below desired investment.

With ‘animal spirits’ at  $a$  with corresponding investment  $I(a)$ , and government expenditure at  $G(\alpha)$ , and treating the savings and tax revenue functions as dependent on  $Y$  and not subject to shifts, the equilibrium value of income would be at  $Y_s$ . A shift in the budget deficit function to  $G(\beta) - t(Y)$  would lead to an equilibrium level of income equal to  $Y^*$  which is deemed to correspond to the high level of employment. The appropriate size of the budget deficit for high level of employment can then be read off. Now if ‘animal spirits’ shift to  $b$  and investment function becomes  $I(b)$  it is evident from Figure 1 that the equilibrium level of income  $Y_c$  would

be above the high level of employment. For some this could signal inflationary pressures and for others would be infeasible. At  $Y^*$ , the budget deficit would exceed the available net private savings. In the equivalent of these circumstances it would be the case that the attempted budget deficit is too large; in the first scenario portrayed the budget deficit would be too small.

**Figure 2: Budget deficits and level of income**



## 7. GOVERNMENT DEBT SCARES

The level of government debt (relative to GDP or similar) can be portrayed as ‘too high’ (and hence need for budget surplus to reduce it<sup>6</sup>) and placing limits on ability of the fiscal authorities to respond to future downturns in economic activity through fiscal stimulus (or at least allowing the automatic stabilisers to operate).

The debt to GDP ratio suffers from being a comparison between stock and flow, and by convention the flow is measured on an annual basis. It would be more appropriate to consider the ratio of interest payments on debt and GDP, though the interest payments should be considered

<sup>6</sup> More accurately to run low budget deficit or surplus such that the increase in the government debt is below the nominal rate of growth.

with allowance for the tax to be paid on the interest payments and with allowance for the effects of inflation on the real value of the debt.

Government debt is often, if misleadingly, referred to as the national debt and suggests that it is the nation and its citizens who owe the debt. Foreign assets and liabilities. The government debt has two significant features. First, government debt is the government's liabilities but the holders of that debt financial assets. Thus government debt does not represent a burden on future generations as often claimed since it will involve one group (taxpayers) transferring money to another group (bondholders). Second, when government debt is denominated in the national currency then the government can always service the debt through its tax raising power and its access to the central bank.

The measurement of government debt is not always straightforward, and many different measures exist. IMF (2012) Table 6 provides (for 2011) figures, which indicate the extent of differences in the scale of debt relative to GDP depending on the measure of debt which is used. For the USA gross general government debt is placed at 102.9 per cent of GDP, consolidation with the central bank lowers that to 91.9 per cent; net government debt is 80.3 per cent and net consolidated government and central bank debt 62.8 per cent. For the euro area countries, general government debt stood at 88.1 per cent and net consolidated government and central bank debt 49.7 per cent. Switzerland has general government debt at 48.6 per cent of GDP and net consolidated government and central bank debt – 44.7 per cent (largely due to central bank net foreign assets of 55.9 per cent of GDP). These figures refer to financial assets and liabilities and make no allowance for capital assets owned by government.

The long-term relationships between budget deficit and debt to GDP ratio are well-known. A persistent primary budget deficit (that is excluding interest payments) relative to GDP of  $d$  leads to a debt to GDP ratio of  $b = d/(g-r)$  where  $g$  is the rate of growth of GDP and  $r$  the rate of interest on government debt (here both can be in nominal terms or both in real terms). This ratio provides a sustainable (if rather high) debt to GDP ratio provided  $g$  greater than  $r$ . A persistent overall budget deficit of  $c = (b + r.d)$  leads to a debt to GDP ratio of  $c/g$  where here  $g$  is the nominal growth rate, which would involve a primary position of  $c(g - r)$  which is deficit/surplus

as  $g$  greater/less than  $r$ . With respect to sustainability of a budget deficit position, the relationship between the growth rate and the interest rate paid by government is significant. For the long run interest-growth differential for a sample of advanced economies Barrett (2018) found that “point estimates are indeed negative, [but] a variety of statistical techniques cannot reject the possibility that this differential is small and positive”. He concludes that to be conservative with respect to sustainable debt levels, “models of debt sustainability should feature interest-growth differentials which are small and positive” (p. 38). However, if the budget position is approached in terms of its demand effects, then the relevant budget to consider is the total (rather than the primary budget), and a constant deficit to GDP ratio is always sustainable (provided that nominal growth is positive).

The sustainability of public debt should not be considered in isolation from the sustainability of private debts. Since the interest rate paid by government is generally significantly less than the interest rate paid by private sector firms and households the sustainability issue is more severe for the private sector and particularly households. In a similar vein, current account positions are likely to be unsustainable.

What may be termed the optimal sustainable level of government debt (relative to GDP) would be  $c^*/g$  where  $c^*$  is the ‘optimal’ budget deficit – that is the budget deficit which secures full employment. This is not to underestimate the difficulties of calculating what  $c^*$  would be nor that it would shift over time as there are shifts in investment, savings behaviour and the in the current account deficit.

A specific and ‘high’ debt ratio does not preclude fiscal response to economic downturns for the simple reason that the characteristic of an economic downturn is a decline in investment and a rise in savings (which can only be realised if there is a corresponding budget deficit). In other words, the circumstances in which an increase in the budget deficit would be appropriate (whether arising from the operation of automatic stabilisers or through discretionary actions) are precisely those where the funding of the deficit would not create difficulties.

An argument against running budget deficits over a number of years is that even if it does not involve unsustainable rise in public debt (relative to GDP), the resulting higher (than otherwise) debt ratio will be detrimental to growth. Authors such as Cecchetti et al., 2011, Reinhart and Rogoff (2010) have argued that a debt to GDP ratio of around 80 to 90 per cent endangers, though serious doubts on the results of Reinhart and Rogoff have been cast by Hendon et al. (2014). However, authors such as Panizza and Presbitero (2012) do not confirm any causal relationship running from debt ratio to growth. In Arestis and Sawyer (2014), we illustrated how from a theoretical perspective a low growth (with a low investment to GDP ratio) could be anticipated to be associated with a high budget deficit requirement and resulting high debt to GDP ratio.

## **A CONCLUDING REMARK**

The responsibility of government should be to utilise fiscal policy to achieve high and sustained level of employment. When the budget position is used in this manner, sufficient savings will be generated to enable the required borrowing for the budget deficit to be made. It is the overall budget position which is relevant here, and there are no persuasive reasons for the borrowing involved to be matched with the level of public investment. The extent and structure of public investment should be judged, as other forms of public expenditure, by their contribution to economic and social benefit. The availability of money does not form a constraint on public spending on the basis that the central bank as banker to government can allow spending. Public spending does though require funding through tax receipts and borrowing (which includes net issue of central bank money).



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*Recebido para avaliação em Março de 2018.*  
*Aceito para publicação em Junho de 2018.*